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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/700,956

10/31/2003

William D. Holland

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11/03/2005

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EXAMINER

FINNÉREN, RORY B

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,956

Applicant(s)

HOLLAND, WILLIAM D.

Examiner

Rory Finneren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct. 31, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/31/03 5/20/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-10, 12-18, 20-25, 27-28, and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Tompkins (4,270,131).

As to claim 1, Tompkins teaches the claimed laser scanning apparatus comprising a light source configured to emit a light beam in a single direction (Fig. 1, #10); a scanning device optically coupled with the light source and configured to scan the light beam along a photoconductor in a plurality of scan lines (Fig. 1, #34, #36); and a start of scan detector assembly configured to sample the light beam (Fig. 1, #38) and initiate a start-of-scan operation (Col. 5, lines 51-53) of one of the scan lines of information to be written on the photoconductor, and wherein the sampled light beam is used to control a drive level of the light source (Abstract, lines 8-10).

Regarding claim 2, Tompkins discloses a control system configured to receive a signal from the detector assembly and to control the drive level of the light source based on the signal (Fig. 1, #20, "acoustic modulator").

With regard to claim 3, Tompkins discloses processing circuitry configured to compare an indication of the sampled light beam from the signal with a predetermined value (Col. 3, lines 10-14).

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As to claim 4, Tompkins teaches a control system configured to maintain the drive level of the light source at a predetermined drive level during scanning of one scan line (Col. 8, lines 65-68).

Regarding claim 6, Tompkins teaches sampling the light beam only once per scan line of information written on the photoconductor, and sampling the beam prior to writing the scan line of information on the photoconductor (Fig. 1, #38; Col. 5, lines 3-6).

With regard to claim 7, Tompkins teaches a scanning device comprising a rotating polygon mirror (Fig. 1, #34, #36).

As to claim 8, Tompkins teaches a start-of-scan detector assembly being disposed outside of the scan area of the photoconductor (Col. 5, lines 3-6; Fig. 1).

Regarding claim 9, Tompkins discloses a laser scanning apparatus comprising: a rotating scanning device configured to scan a light beam from a light source (Fig. 1, #34, #36); a photodetector optically coupled with the rotating scanning device and configured to sample the light beam from the rotating scanning device (Fig. 1, #38); and a control system configured to receive an indication of the sampled light (Fig. 1, #20, "acoustoptic modulator").

With regard to claim 10, Tompkins further teaches a light source configured to emit light in a single direction (Fig. 1, #10).

As to claim 12, Tompkins discloses a control system comprising processing circuitry configured to compare an indication of the sample light beam with a predetermined drive level value, and to control the drive level of the light source based on the comparison (Col. 3, lines 10-14).

Regarding claim 13, Tompkins teaches a control system configured to maintain the light source at a constant drive level during scanning of a single line of information on the photoconductor (Col. 4, lines 10-12, "beam intensity correction").

With regard to claim 14, Tompkins teaches a laser scanning apparatus comprising: a scanning device configured to scan a light beam from a light source (Fig. 1, #34, #36); a photodetector optically coupled with the scanning device and configured to sample the light beam only once per line of information scanned onto a photoconductor (Fig. 1, #38); and a control system configured to receive an indication of the sampled light beam from the photodetector and to maintain a drive level of the light source at a constant level during scanning of the line of information onto the photoconductor (Fig. 1, #20, "acoustoptic modulator").

As to claim 15, Tompkins further teaches a light source configured to emit a light beam in a single direction (Fig. 1, #10).

Regarding claim 16, Tompkins discloses the claimed apparatus wherein a photodetector is utilized to initiate a start of scan operation of the line of information. (Abstract, lines 2-3).

With regard to claim 17, Tompkins teaches the claimed apparatus wherein the sampled light beam is obtained before scanning a line of information onto the photoconductor (Fig. 1, #38; Col. 2, lines 52-57).

As to claim 18, Tompkins discloses a laser scanning apparatus comprising: means for scanning a light beam from a light source onto a photoconductor (Fig 1, #34, 36); means for sampling the light beam which causes information to be scanned onto

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the photoconductor (Fig. 1, #38); and means for receiving an indication of the sampled light beam from the means for sampling and for maintaining the light source at a constant drive level during scanning of the line of information onto the photoconductor (Fig. 1, #20).

Regarding claim 20, Tompkins teaches the claimed apparatus wherein the light beam is sampled before writing a scan line of information onto the photoconductor (Fig. 1, #38; Col. 2, lines 52-57).

With regard to claim 21, Tompkins discloses the claimed apparatus wherein the means for sampling is disposed outside of a scan area of the photoconductor (Col. 5, lines 3-6).

As to claim 22, Tompkins discloses a laser scanning method comprising: emitting a light beam in a single direction using a light source (Fig. 1, #10); providing a rotating scanning device (Fig. 1, #34) and a photoconductor (Fig. 1, #38); scanning the light beam along the photoconductor using the rotating scanning device (Fig. 1, #32, #34, #36); sampling the light beam from the rotating scanning device using a sampling assembly (Fig. 1, #38); and controlling a drive level of the light source responsive to the sampled light beam (Fig. 1, #20; Col. 3, lines 10-14).

Regarding claim 23, Tompkins teaches initiating writing of a scan line of information onto the photoconductor using the sampling assembly (Col. 9, lines 11-28).

With regard to claim 24, Tompkins teaches receiving the sampled light beam in a control system (Col. 2, lines 52-57); comparing an indication of the sampled light beam with a predetermined drive level value (Col. 3, lines 10-14); and controlling the drive

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level of the light source responsive to the comparison (Col. 3, lines 10-14, "intensity correction signal").

As to claim 25, Tompkins discloses maintaining an output power of the light source at a constant level during writing of a single scan line of information onto the photoconductor (Col. 4, lines 10-12, "beam intensity correction").

Regarding claim 27, Tompkins teaches performing the sampling only once per scan line of information written on the photoconductor and prior to writing the scan line of information on the photoconductor (Col. 2, lines 52-57).

With regard to claim 28, Tompkins discloses a sampling assembly being located outside of a scan area of the photoconductor (Fig. 1, #38; Col. 5, lines 3-6).

As to claim 31, Tompkins teaches the claimed article of manufacture comprising: processor-usable media ("RAM", Fig. 1, #84, #92) comprising programming configured to cause processing circuitry to: output a control signal to control a light source configured to generate a light beam used to scan a plurality of scan lines of information onto a photoconductor (Col. 3, lines 4-18); access an output of a start-of-scan detector assembly generated responsive to detection of the light beam thereby, wherein the output indicates appropriate timing for initiation of writing of the information for the respective scan lines (Col. 9, lines 24-28); process the output of the start-of-scan detector assembly (Col. 9, lines 11-28); and adjust the control signal responsive to the processing of the output to adjust an intensity of the light beam generated by the light source (Col. 9, lines 24-28).

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Regarding claim 32, Tompkins discloses the claimed article of manufacture wherein the programming is further configured to cause the processing circuitry to adjust the control signal to provide the light beam having a substantially constant intensity during the scanning of the scan lines (Col. 4, lines 10-12, "beam intensity correction").

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 11, 19, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tompkins in view of Hsu (6,263,002).

With regard to claims 5, 11, and 19, Tompkins discloses the claimed apparatus except for the light source comprising a vertical cavity surface emitting laser diode (VCSEL). Hsu discloses a light source comprising a VCSEL (Col. 1, lines 8-30). Therefore, it would have been obvious to one skilled in the art at the time of the invention to use a VCSEL as a light source because their unique structure offers significant advantages over conventional edge-emitting lasers (Col. 1, lines 9-10).

As to claim 26, Tompkins discloses the claimed method except for the light source comprising a vertical cavity surface emitting laser diode (VCSEL). Hsu discloses using a light source comprising a VCSEL (Col. 1, lines 8-30). Therefore, it

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would have been obvious to one skilled in the art at the time of the invention to use a VCSEL as a light source because their unique structure offers significant advantages over conventional edge-emitting lasers (Col. 1, lines 9-10).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tompkins in view of Araki (5,832,012).

Regarding claim 29, Tompkins discloses the claimed hard imaging device comprising: a photoconductor (Fig. 1, #38); a laser scanning apparatus configured to write scan lines of information onto the photoconductor, the laser scanning apparatus comprising: a light source configured to emit a light beam in a single direction (Fig. 1, #10); a scanning device optically coupled with the light source and configured to scan the light beam along the photoconductor to form the scan lines (Fig. 1, #34); and a sampling assembly configured to sample the light beam and to initiate start-of-scan operations to write the scan lines onto the photoconductor, and wherein the sampled light beam is used to control a drive level of the light source (Fig. 1, #38). Tompkins does not disclose an image engine. Araki does teach an image engine configured to form hard images from the written scan lines using media (Col. 5, lines 7-11).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Tompkins to include an image engine for the purpose of transferring an image to paper or other media.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tompkins.

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With regard to claim 30, Tompkins teaches the laser scanning apparatus further comprising: a control system configured to receive a signal from the sampling assembly and to control the drive level of the light source based on the received signal ("acoustoptic modulator", Fig. 1, #20).

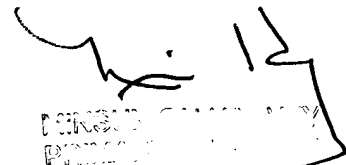
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rory Finneren whose telephone number is (571) 272-2243. The examiner can normally be reached on Mon. - Fri. 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Oh Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rbf

A handwritten signature in black ink is written over a rectangular stamp. The stamp contains the text "RECEIVED" and "PATENT" in a bold, sans-serif font, with some smaller, less legible text below it.